

REMARKS

The present application relates to hybrid maize plant and seed 31R88. Claims 1-32 are currently pending in the present application. Claims 6, 8, 9-11, 13-15, 17-19, 21-23, 24, 26-28, and 30-32 have been amended. Applicant respectfully requests consideration in light of the following remarks.

OBJECTIONS

Claims 1, 5, and 7 stand objected to for their inclusion of blank lines. The Examiner notes that it is understood that the blanks will be replaced with the deposit accession number. Applicant affirms that upon deposit the claims will be amended to recite the deposit accession number.

REJECTIONS UNDER 35 U.S.C. § 112, SECOND PARAGRAPH

Claims 6, 8-11, 13-15, 17-19, 21-14, 26-28, and 30-32 stand rejected under 35 U.S.C. § 112 second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter of applicant's invention.

Claims 8 and 21 stand rejected as indefinite for the recitation "wherein said plant is male sterile" since the claim from which they depend are drawn to plants which are not male sterile. Claims 8 and 20 have been amended to recite that the plants to which they refer have been "manipulated to be male sterile" to more clearly indicate that they are further modifications of the plant of the preceding claim.

Claim 6 stands rejected for the phrase "the...protoplasts" which lacks antecedent basis. The Examiner suggests deleting "the" before "cells" and inserting --of the tissue culture-- after "protoplasts. Claim 6 has been so amended.

Claims 11, 15, 19, 24, 28, and 32 stand rejected for their use of phrases such as "above average", "good", "low", "moderate", and "particularly" which the Examiner says are unduly narrative. This language has been removed from the claims except in relation to the term "low to moderate yield environment" This is a term of art for plant breeders and should be present in the claim as hybrid 31R88 is adapted to yield well in low to moderate yield environments and an infringing variety may be different with respect to yield in a high

yielding environment but may possess the unique combination of features from 31R88 which cause the yield to be good or not statistically different than hybrid 31R88 in a low to moderate yield environment.

Claims 9, 13, 17, 22, 26, and 30 stand rejected in their recitation of “includes” and for failing to recite essential method steps. While applicant submits that the term “includes” is a recognize open transition term, the claims have been amended recite the more common open transition “comprises”. The claims have also been amended to positively recite the step of “breeding” with the obtained variety.

Claims 10, 14, 18, 23, 27, and 31 stand rejected as indefinite for their recitation of “the maize plant breeding program of claim 9 [or 13]” as the preceding claims were drawn to a method. The se claims have been amended to indicate that the preceding claim was a method claim.

Issues Under 35 U.S.C. § 102/103

Claims 11, 15, 19, 24, 28, and 32, remain rejected under 35U.S.C. 102(b) as anticipated by or, in the alternative, as obvious under 35 U.S.C . 103(a) over Roundy. The Examiner notes that these claims are taught by Roundy as the patent teaches a maize hybrid with good resistance to Gray Leaf Spot, strong yield, very good stalk lodging resistance, above average root lodging resistance, and strong stay green. The Examiner notes that the maize plant from Roundy differs from the claimed plant only in its derivation from 31R88. The Examiner concludes that the process of making the claimed plants does not distinguish the plants themselves from those taught by the reference.

Applicant respectfully traverses and requests reconsideration of claims 11, 15, 19, 24, 28, and 32 as amended herein. A plant with the combination of two of these traits is also not rendered anticipated or obvious from Roundy It would require undue experimentation to begin with the hybrid of 31R88 which has its own unique combination of traits to breed with it to recover a hybrid with at least two of the traits enumerated in claims 11, 15, 19, 24, 28, and 32. Further, there is no expectation of success that the crossing of the hybrid 31R88 with some yet to be identified plant would yield a plant with two of the traits enumerated in the claim. Each generation would bring a random combination of traits and there is no

expectation that the claimed combination could be achieved at all. Without any teaching about dominance, or heritability of such traits it cannot be said that there is an expectation of success that the combination of plants would achieve the combination enumerated in the claim, to say nothing of issues such as inbreeding depression etc. The laborious process of breeding to generate a hybrid is disclosed in the specification and to assume that another hybrid can be bred to generate the same grouping of traits is speculation at best.

Further, applicant notes that it is impermissible to use hindsight reconstruction and the benefit of applicants disclosure to cherry pick among pieces which are present in the art, there must be some suggestion to make the combination and an expectation of success. In re Vaeck 20 U.S.P.Q.2d 1434 (Fed. Cir. 1991). It must be recognized that the 31R88-derived plants are themselves unusual and a nonobvious result of a combination of previously unknown and nonobvious genetics. In addition to the phenotypic traits described herein, each 31R88-derived plant has an additional benefit unique to each specific cross using 31R88 as one of its ancestors. Thus, they deserve to be considered new and nonobvious compositions in their own right as products of crossing when 31R88 is used as a starting material.

Claims 1 - 32 stand rejected under 35 U.S.C . 103(a) over Roundy. The examiner asserts that Roundy teaches a maize dent hybrid, with absent anthocyanin in the brace roots, dark green leaves, no leaf sheath pubescence, yellow anthers, light green glumes, light green silks, upright ear, red cob, strong stay green, strong yield, very good stalk lodging resistance, above average root lodging resistance, and good resistance to southern Leaf blight, and concludes it would be obvious to modify Roundy to incorporate any desired agronomic traits.

. Applicant respectfully traverses. When looking at maize plants it would be possible to find many traits that are similar between varieties such as the disease resistance or growth habit. However, to say that there are similarities in phenotype between two varieties is not the same as saying that the two varieties had the same morphological and physiological characteristics as a whole, or that one is an obvious variant of the other. Further, similarity in phenotype does not mean that the two varieties will perform similarly, in identical environmental conditions or more particularly, in a breeding program. The claims as amended recite a specific reference variety and a specific statistical test which may be

performed to determine whether in fact the traits observed are actually the "same".

Any phenotypic trait that is expressed in the claimed plants is a result of a combination of all of the genetic material present in the 31R88 plant, and 31R88 will have its own unique genetic profile that it will contribute to a breeding program. This unique genetic background will result in the claimed plant and this profile and its combination with other plants will result in a unique combined genetic profile that is the product claimed.

CONCLUSION

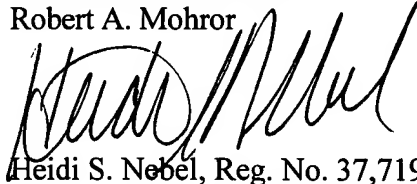
Applicant submits that, in light of the foregoing amendments and remarks, the claims, as amended, are in condition for allowance. The Examiner is invited to contact the undersigned at the number listed if this amendment does not result in allowable subject matter. Reconsideration and early notice of allowability are respectfully requested.

No fees or extensions of time are believed to be due in connection with this amendment; however, consider this a request for any extension inadvertently omitted, and charge any additional fees to Deposit Account No. 26-0084.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "**Version with markings to show changes made.**"

Reconsideration and allowance is respectfully requested.

Respectfully submitted,
Robert A. Mohror



Heidi S. Nobel, Reg. No. 37,719
ZARLEY, McKEE, THOMTE, VOORHEES
& SEASE

801 Grand Avenue, Suite 3200
Des Moines, Iowa 50309-2721
Phone No. (515) 288-3667
Fax No. (515) 288-1338

CUSTOMER NO: 27142

Attorneys of Record

-pw-

RECEIVED

FEB 04 2002

TECH CENTER 1600/2900

Application No. 09/489,784



AMENDMENT — VERSION WITH MARKINGS
TO SHOW CHANGES MADE

In the Claims

Please amend claims 6, 8-11, 13-15, 17-19, 21-24, 26-28, 30-32 as follows:

6. (Amended)

A tissue culture according to claim 5, [the] cells or protoplasts of the tissue culture being from a tissue selected from the group consisting of leaves, pollen, embryos, roots, root tips, anthers, silks, flowers, kernels, ears, cobs, husks, and stalks.

8. (Amended)

The maize plant of claim 2 wherein said plant has been manipulated to be [is] male sterile.

9. (Amended)

A method for developing a maize plant in a maize plant breeding program using plant breeding techniques, which [include] comprise employing a maize plant, or its parts, as a source of plant breeding material, comprising: obtaining the maize plant, or its parts, of claim 2 as a source of said breeding material.

10. (Amended)

The [maize plant breeding program] method of claim 9 wherein plant breeding techniques are selected from the group consisting of: recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.

11. (Amended)

A maize plant, or its parts, wherein at least one ancestor of said maize plant is the maize plant, or its parts, of claim 2, said maize plant capable of expressing a combination of at least two [31R88] traits which are not significantly different from 31R88 when determined at a 5% significance level and when grown in the same environmental conditions, said traits selected from the group consisting of: a relative maturity of [approximately] 119 based on the Comparative Relative Maturity Rating System for harvest moisture of grain, [strong] yield potential under low to moderate yield environments, [very good] stalk lodging resistance, [above average] root lodging resistance, [strong] staygreen, [strong] drought tolerance, [good] resistance to Gray Leaf Spot, [good] resistance to common rust, [high] resistance to Southern Leaf Blight, [above average] brittle stalk resistance, and [particularly] suited to the Southeast region of the United States.

13. (Amended)

A method for developing a maize plant in a maize plant breeding program [using plant breeding techniques, which include employing a maize plant, or its parts, as a source of plant breeding material,] comprising: obtaining the maize plant, or its parts, of claim 12; and employing said plant or its parts as a source of breeding material using plant breeding techniques.

14. (Amended)

The[maize plant breeding program] method of claim 13 wherein plant breeding techniques are selected from the group consisting of: recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.

15. (Amended)

A maize plant, or its parts, wherein at least one ancestor of said maize plant is the maize plant, or its parts, of claim 12, said maize plant capable of expressing a combination of at least two [31R88] traits which are not significantly different from 31R88 when determined

at a 5% significance level and when grown in the same environmental conditions, said traits selected from the group consisting of: a relative maturity of [approximately] 119 based on the Comparative Relative Maturity Rating System for harvest moisture of grain, [strong] yield potential under low to moderate yield environments, [very good] stalk lodging resistance, [above average] root lodging resistance, [strong] staygreen, [strong] drought tolerance, [good] resistance to Gray Leaf Spot, [good] resistance to common rust, [high] resistance to Southern Leaf Blight, [above average] brittle stalk resistance, and [particularly] suited to the Southeast region of the United States.

17. (Amended)

A method for developing a maize plant in a maize plant breeding program [using plant breeding techniques, which include employing a maize plant, or its parts, as a source of plant breeding material,] comprising: obtaining the maize plant, or its parts, of claim 16 and employing said plant or its parts as a source of breeding material using plant breeding techniques.

18. (Amended)

The [maize plant breeding program] method of claim 17 wherein plant breeding techniques are selected from the group consisting of: recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.

19. (Amended)

A maize plant, or its parts, wherein at least one ancestor of said maize plant is the maize plant, or its parts, of claim 16, said maize plant capable of expressing a combination of at least two [31R88] traits which are not significantly different from 31R88 when determined at a 5% significance level and when grown in the same environmental conditions, said traits selected from the group consisting of: a relative maturity of [approximately] 119 based on the Comparative Relative Maturity Rating System for harvest moisture of grain, [strong] yield potential under low to moderate yield environments, [very good] stalk lodging resistance,

[above average] root lodging resistance, [strong] staygreen, [strong] drought tolerance, [good] resistance to Gray Leaf Spot, [good] resistance to common rust, [high] resistance to Southern Leaf Blight, [above average] brittle stalk resistance, and [particularly] suited to the Southeast region of the United States.

21. (Amended)

The maize plant of claim 20 wherein said [maize] plant [is] has been manipulated to be male sterile.

22. (Amended)

A method for developing a maize plant in a maize plant breeding program [using plant breeding techniques, which include a maize plant, or its parts, as a source of plant breeding material,] comprising: obtaining the maize plant, or its parts, of claim 20; and employing said plant or its parts as a source of [said] breeding material using plant breeding techniques.

23. (Amended)

The [maize plant breeding program] method of claim 22 wherein plant breeding techniques are selected from the group consisting of: recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.

24. (Amended)

A maize plant, or its parts, wherein at least one ancestor of said maize plant is the maize plant, or its parts, of claim 20, said maize plant capable of expressing a combination of at least two [31R88] traits which are not significantly different from 31R88 when determined at a 5% significance level and when grown in the same environmental conditions, said traits selected from the group consisting of: a relative maturity of [approximately] 119 based on the Comparative Relative Maturity Rating System for harvest moisture of grain, [strong] yield potential under low to moderate yield environments, [very good] stalk lodging resistance, [above average] root lodging resistance, [strong] staygreen, [strong] drought tolerance,

[good] resistance to Gray Leaf Spot, [good] resistance to common rust, [high] resistance to Southern Leaf Blight, [above average] brittle stalk resistance, and [particularly] suited to the Southeast region of the United States.

26. (Amended)

A method for developing a maize plant in a maize plant breeding program [using plant breeding techniques, which include employing a maize plant, or its parts, as a source of plant breeding material,] comprising: obtaining the maize plant, or its parts, of claim 25; and employing said plant or its parts as a source of [said] breeding material using plant breeding techniques.

27. (Amended)

The [maize plant breeding program] method of claim 26 wherein plant breeding techniques are selected from the group consisting of: recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.

28. (Amended)

A maize plant, or its parts, wherein at least one ancestor of said maize plant is the maize plant, or its parts, of claim 25, said maize plant capable of expressing a combination of at least two [31R88] traits which are not significantly different from 31R88 when determined at a 5% significance level and when grown in the same environmental conditions, said traits selected from the group consisting of: a relative maturity of [approximately] 119 based on the Comparative Relative Maturity Rating System for harvest moisture of grain, [strong] yield potential under low to moderate yield environments, [very good] stalk lodging resistance, [above average] root lodging resistance, [strong] staygreen, [strong] drought tolerance, [good] resistance to Gray Leaf Spot, [good] resistance to common rust, [high] resistance to Southern Leaf Blight, [above average] brittle stalk resistance, and [particularly] suited to the Southeast region of the United States.

30. (Amended)

A method for developing a maize plant in a maize plant breeding program [using plant breeding techniques, which include employing a maize plant, or its parts, as a source of plant breeding material,] comprising: obtaining the maize plant, or its parts, of claim 29; and employing said plant or its parts as a source of breeding material using plant breeding techniques.

31. (Amended)

The [maize plant breeding program] method of claim 30 wherein plant breeding techniques are selected from the group consisting of: recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.

32. (Amended)

A maize plant, or its parts, wherein at least one ancestor of said maize plant is the maize plant, or its parts, of claim 29, said maize plant capable of expressing a combination of at least two [31R88] traits which are not significantly different from 31R88 when determined at a 5% significance level and when grown in the same environmental conditions, said traits selected from the group consisting of: a relative maturity of [approximately] 119 based on the Comparative Relative Maturity Rating System for harvest moisture of grain, [strong] yield potential under low to moderate yield environments, [very good] stalk lodging resistance, [above average] root lodging resistance, [strong] staygreen, [strong] drought tolerance, [good] resistance to Gray Leaf Spot, [good] resistance to common rust, [high] resistance to Southern Leaf Blight, [above-average] brittle stalk resistance, and [particularly] suited to the Southeast region of the United States.